

# E.S.C. Pod

- **Environmentally Self-Contained Housing Pod**



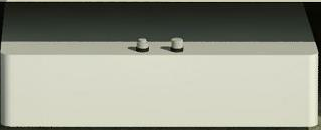
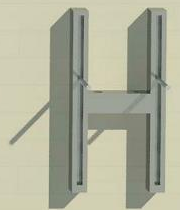
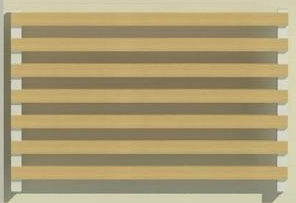
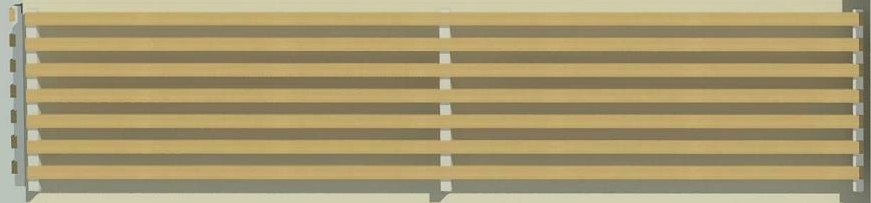
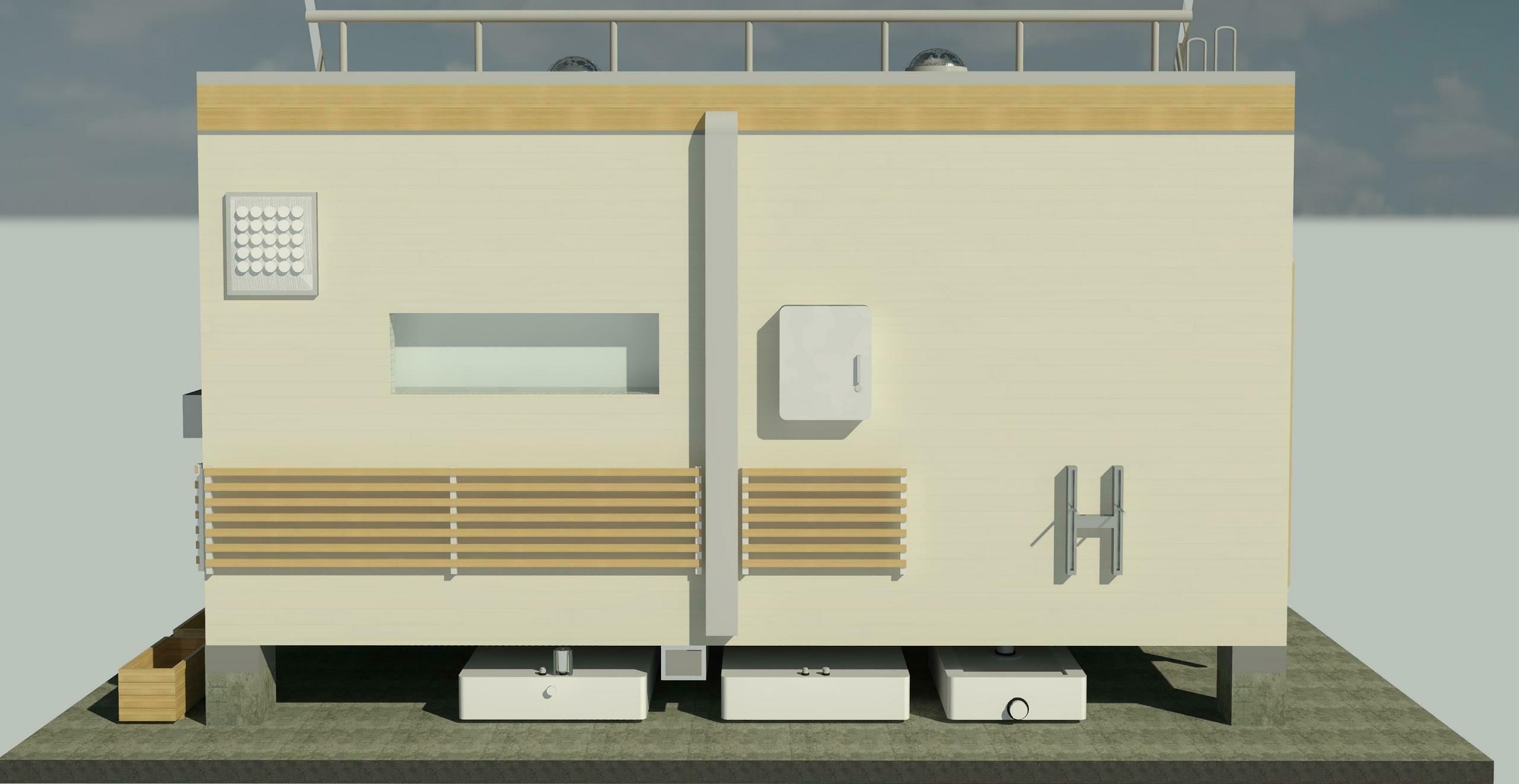
# The Building

- Fully self-contained
- No utilities required
- No foundation or site prep required
- Built completely off-site
- Can be deployed to any location
- Delivered to site by truck
- Built completely out of sustainable materials





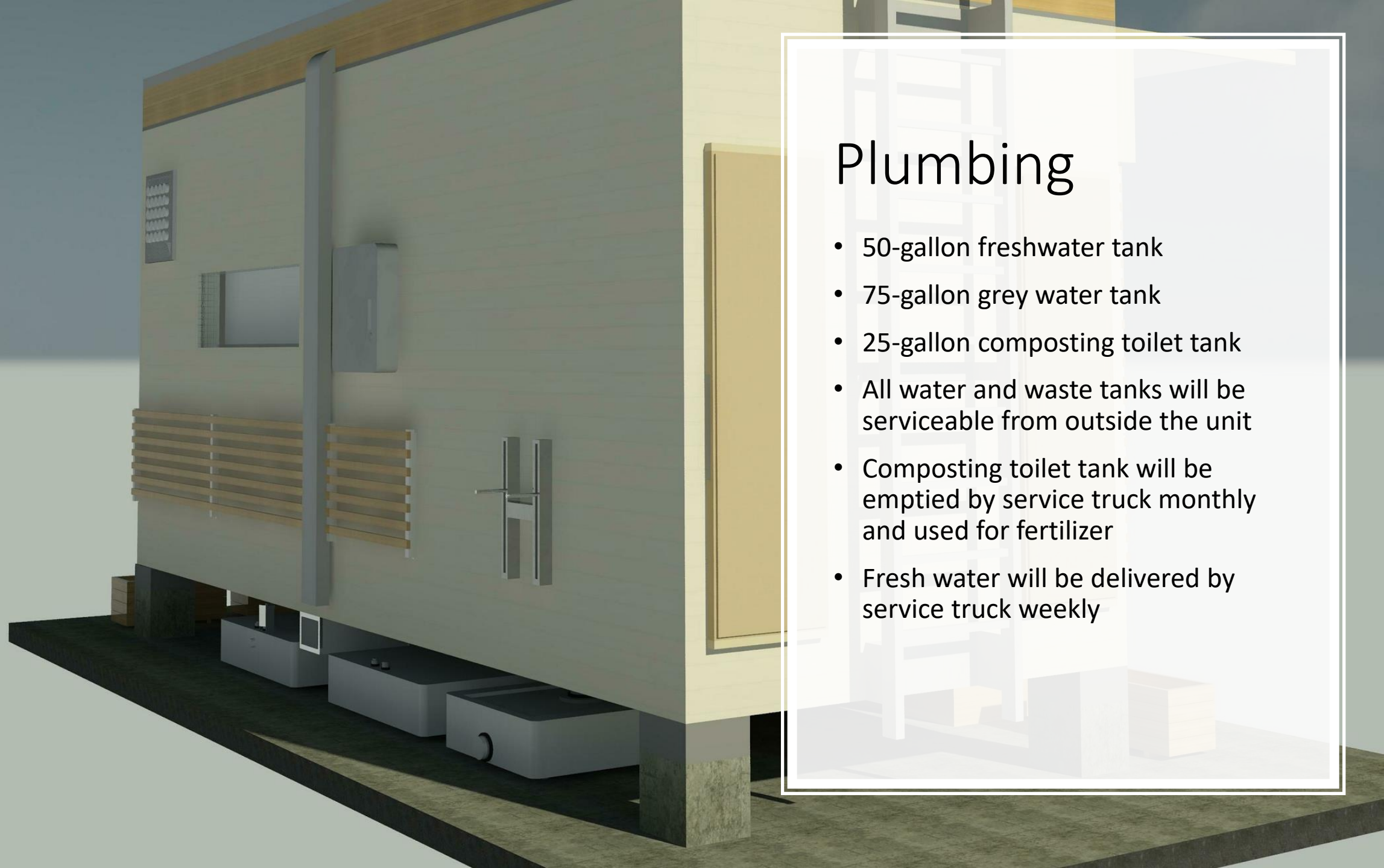






# Building Materials

- 20' x 8' x 9'6" Shipping Container
- Bamboo Plywood
- Bamboo wall studs
- Light gauge C-Channel steel (recycled)
- Low-E insulated sliding windows
- Low-E coated curtain wall
- Bamboo Trellises
- Recycled aluminum
- Hemp

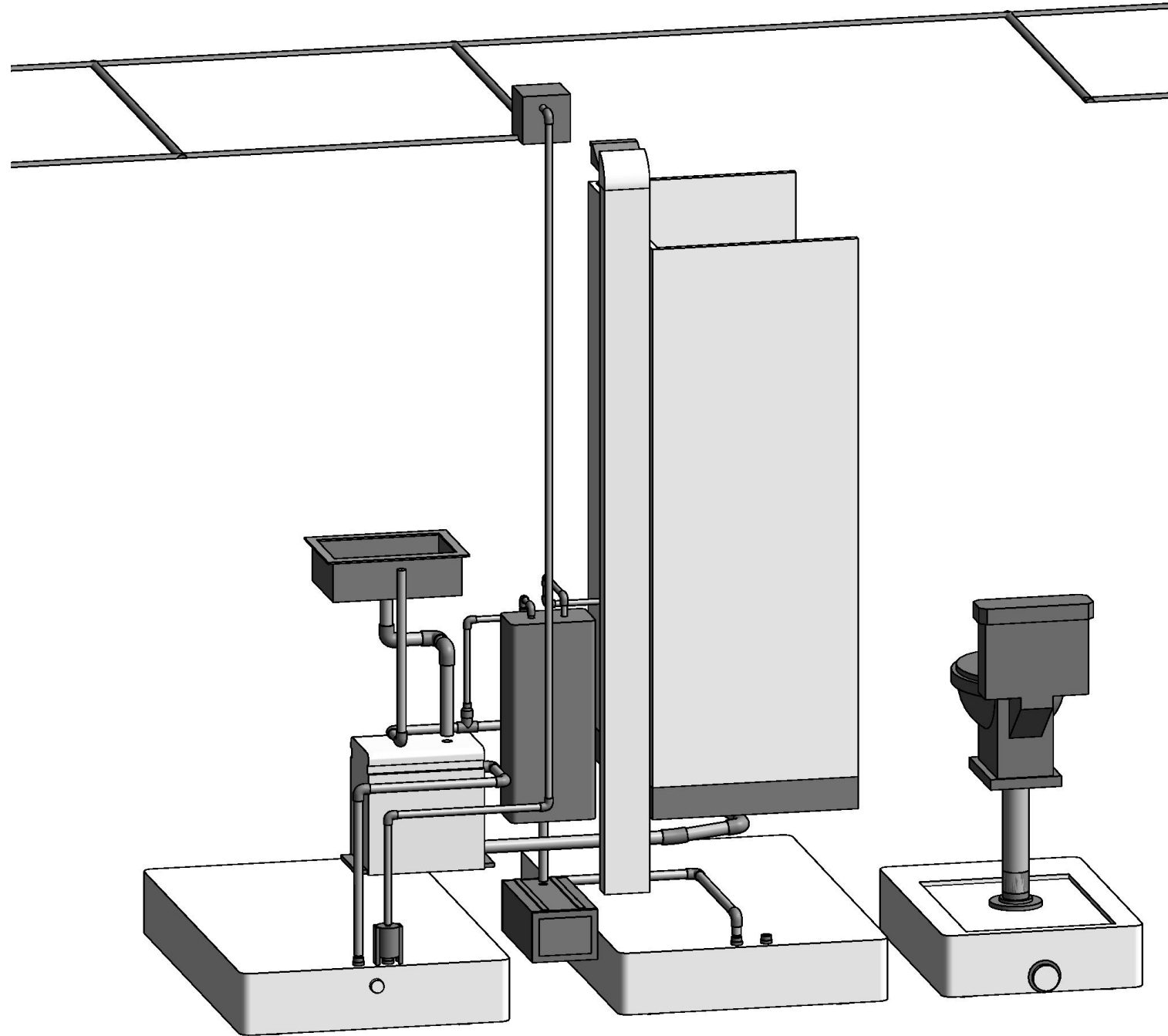


# Plumbing

- 50-gallon freshwater tank
- 75-gallon grey water tank
- 25-gallon composting toilet tank
- All water and waste tanks will be serviceable from outside the unit
- Composting toilet tank will be emptied by service truck monthly and used for fertilizer
- Fresh water will be delivered by service truck weekly

# Plumbing

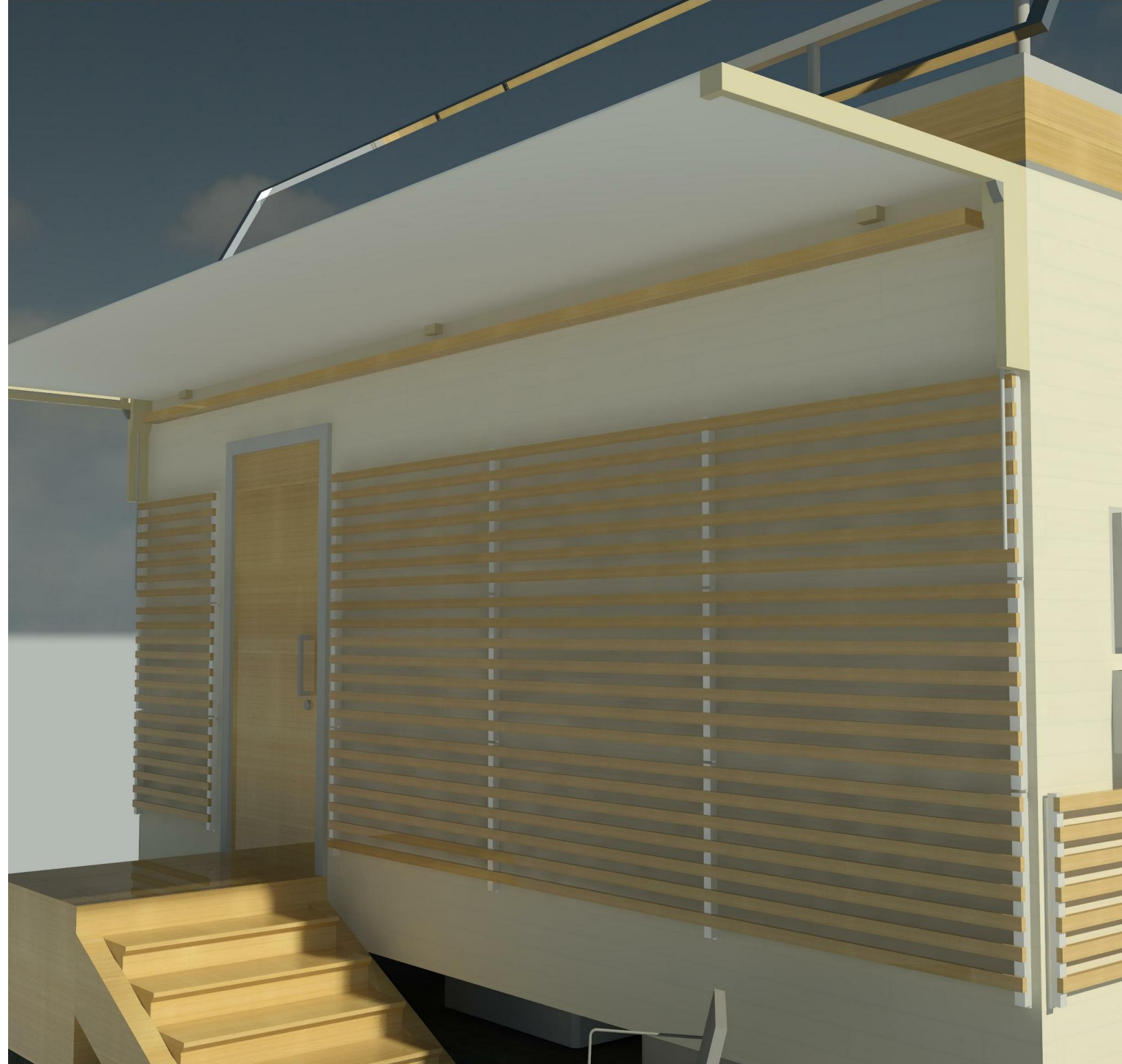
- Fresh water will be pumped to sink and shower from 50-gallon tank below
- Hot water will be produced by a solar powered water tank
- Toilet is a composting toilet that eliminates need for sewer connections
- Using a system of pumps and filters, as much water as possible will be recycled for gardening and general non-potable use
- Grey water from tank will be filtered and pumped to rooftop garden



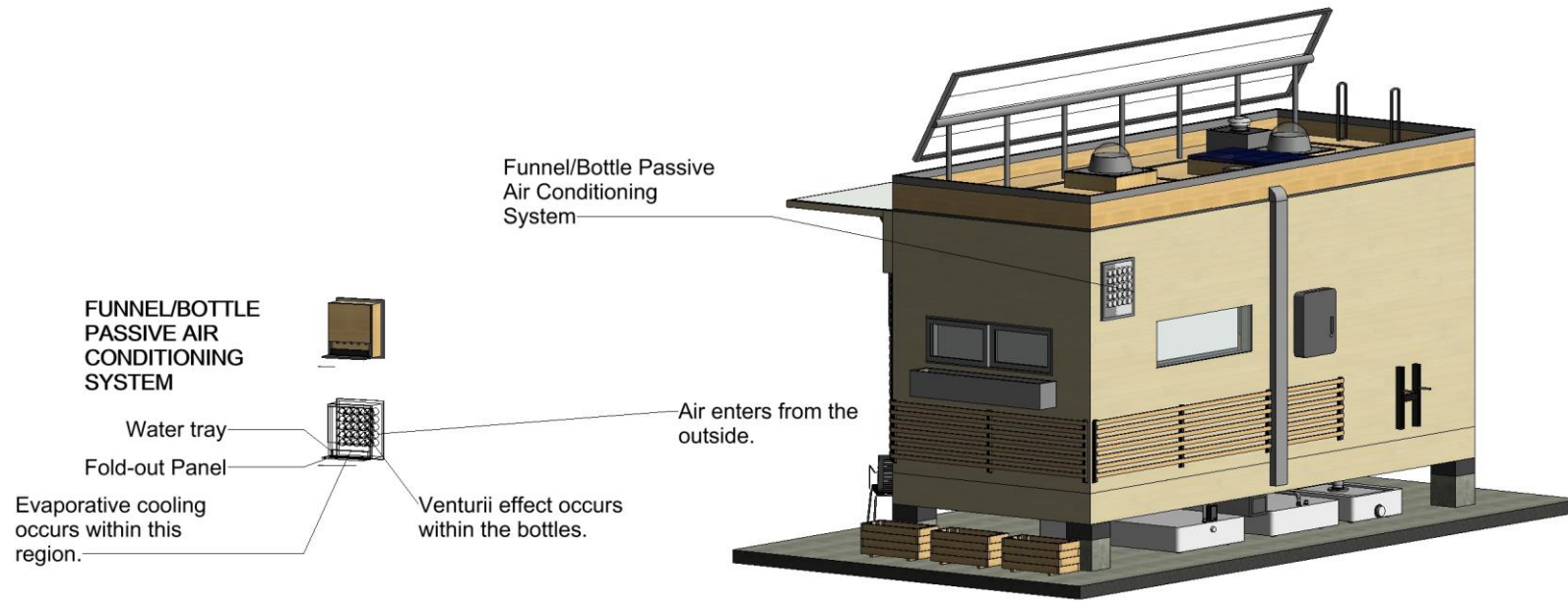


# Cooling Systems

- Floor louver ventilation
  - Air pressure differences brings cool air in from under the unit forcing warmer air out through the ceiling vent
  - Air is pushed into the walls providing longer cooling
- The green roof
  - Reduces temperatures of the roof surface
  - Removes heat from the air
  - Provides shade for the roof.
- The vine wall coverings
  - Provides shade
  - Creates a barrier from sun/heat exposure
  - Vines grow on the bamboo wall trellises
- The Sunshade(Horizontal fins)
  - Temperature control
  - Sun shading
  - Cools walls



# Passive Air Conditioning System





# Passive Air Conditioning

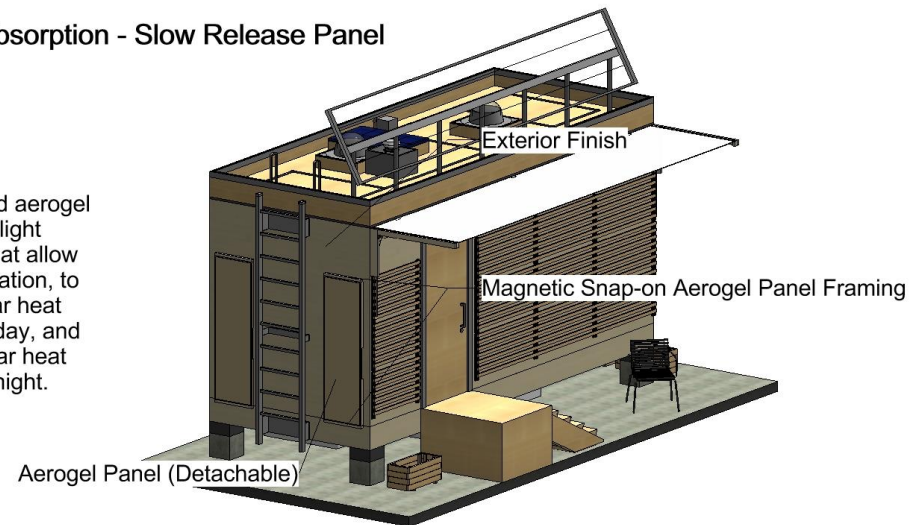
The water bottle passive air conditioning as seen from the outside of the unit.

# Passive Heating System

- Aerogel outdoor-indoor panel for heat absorption and heat emission
- A heat absorbing black material is surrounded by a coat of aerogel that is one directional. It allows heat to come in but does not let it out.
- The loading period is simply exposing the aerogel to sunlight. Afterwards, one can bring the pack inside, remove the heat absorbing material out of its aerogel encasement and let it naturally heat the inside of the home.

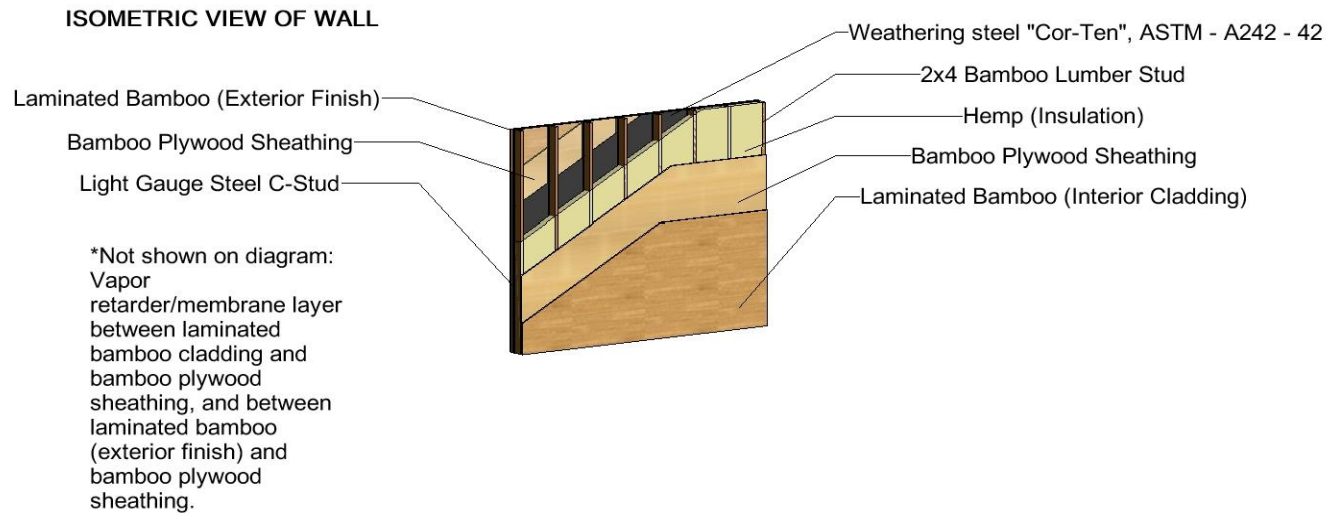
Aerogel Heat Absorption - Slow Release Panel

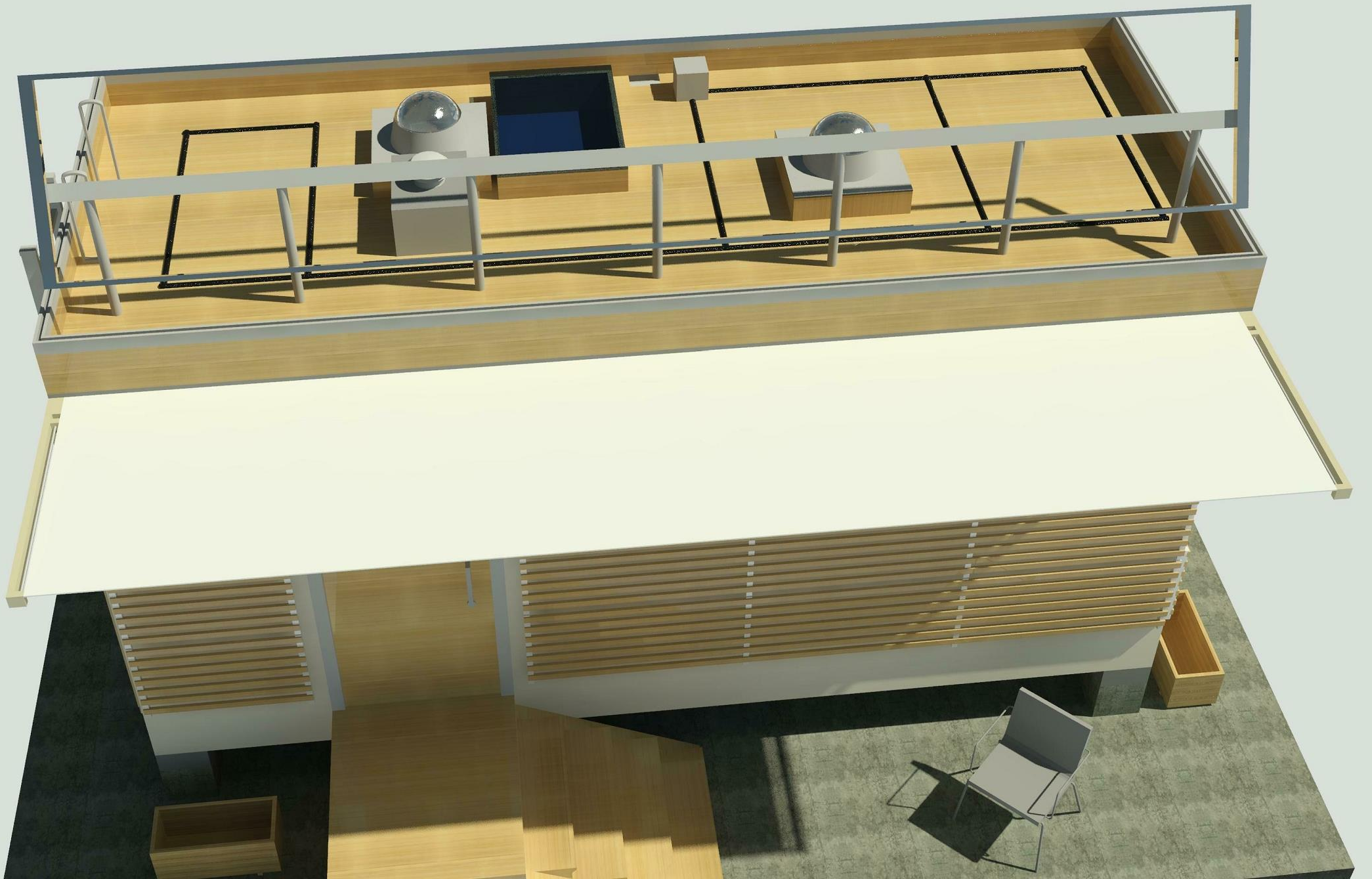
Silica based aerogel has a 70% light emission that allow light penetration, to absorb solar heat during the day, and release solar heat during the night.



# Insulation

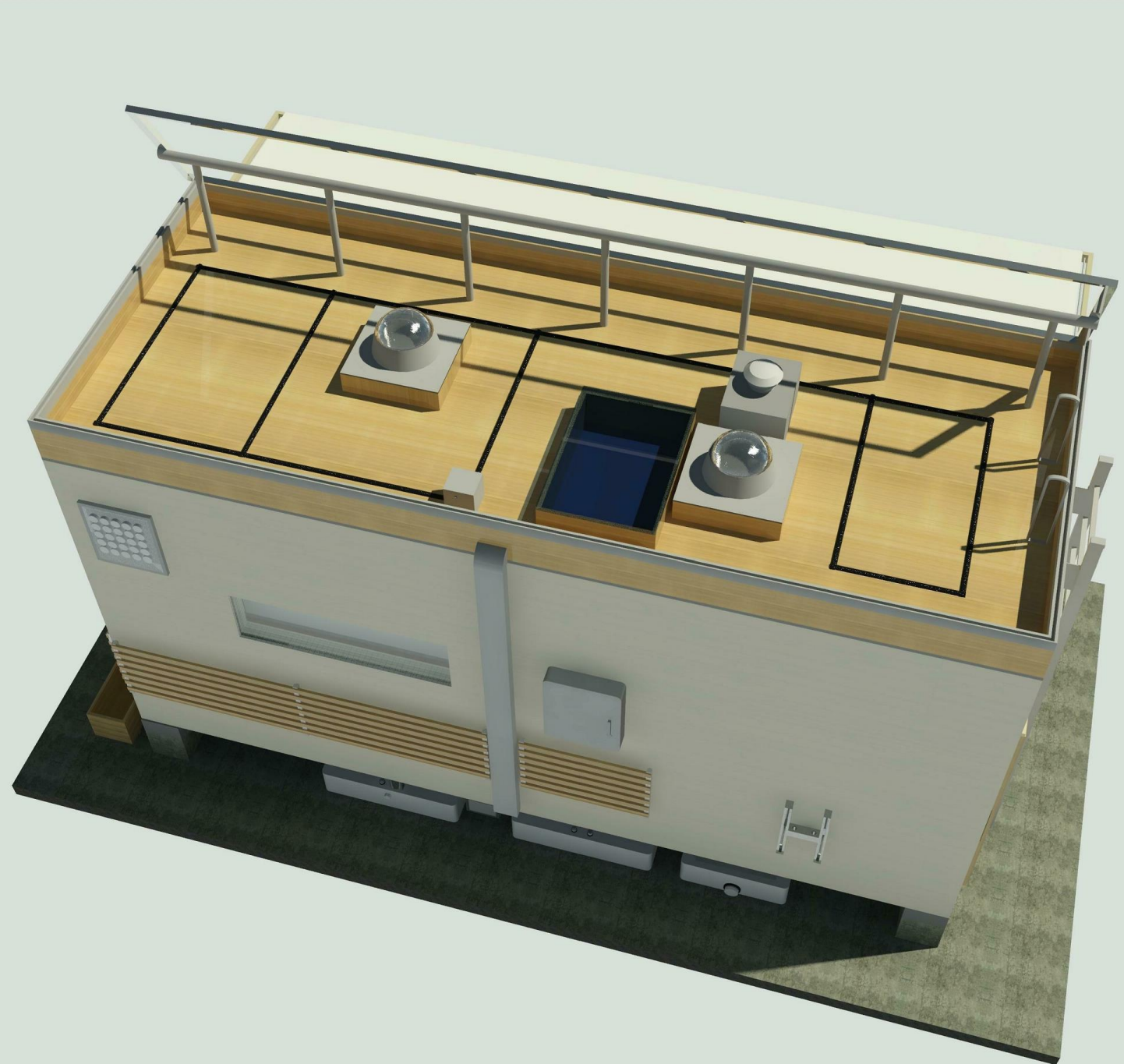
- Hemp insulation
- High R-value
- Healthier for the user
- Thinner in size per sheet
- Sustainable





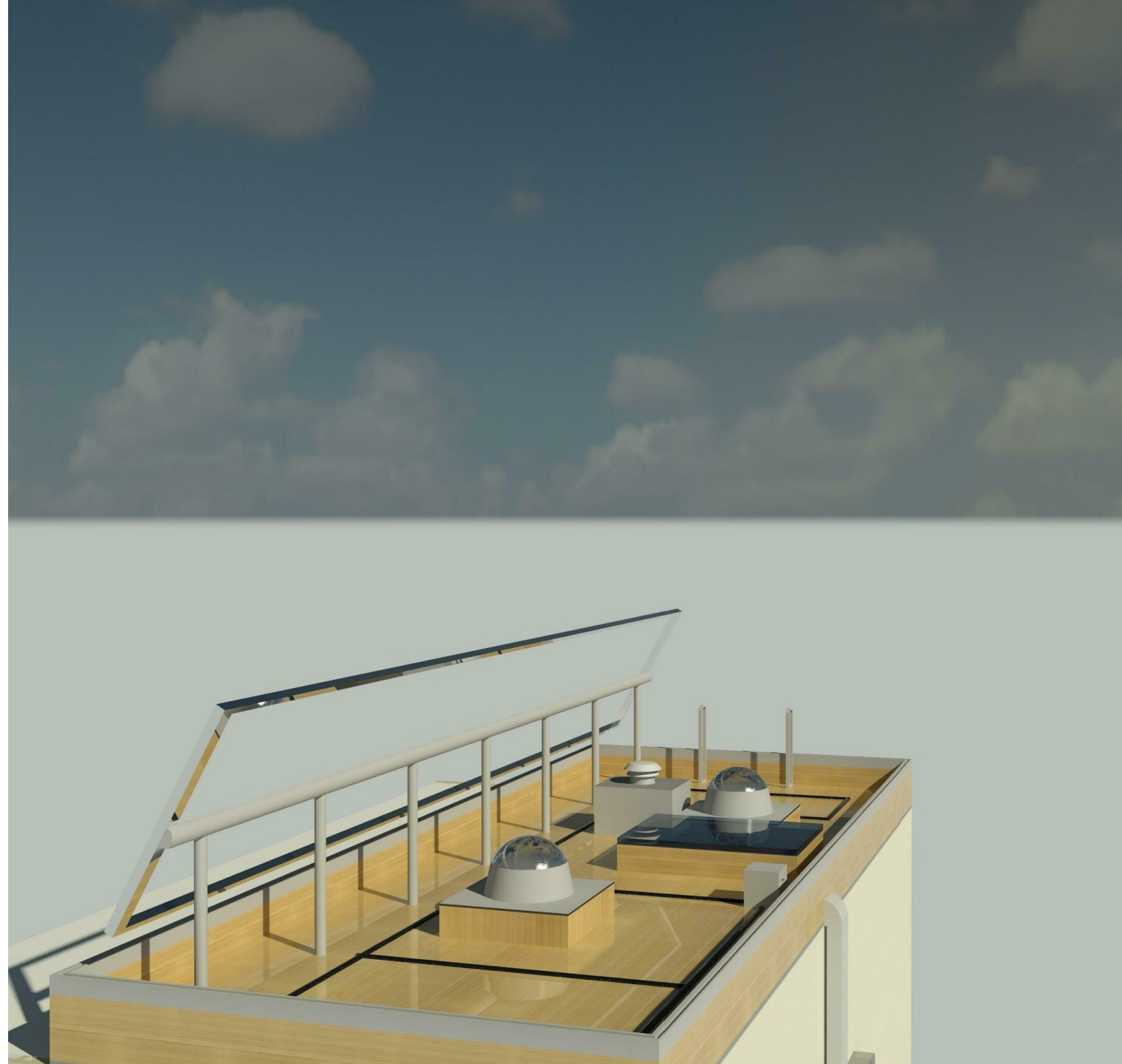
# Rooftop Features

- *Solatube Skylights:* One of the main ways to save on energy and lighting is to use Solatube skylights. Sunlight reflects off the 360-degree solar cap while reflecting harmful and powerful heat rays. Light travels down the refraction tube and finally to the dispersion unit inside of the living space. It is 100% passive and makes our dark dreary box into a bright space for someone to live in.



# Solar Panels

- Transparent solar panels: The roof has been fitted with transparent solar panels
- It allows nonvisible light to be captured while allowing visible light to reach the Solatubes
- Green roof appropriate allowing light to reach the plants that form the green roof
- Adds to the aesthetic
- Provides sustainable renewable energy for the home







# Interior

- All cabinets, furniture, and shelving is made from bamboo
- Paperstone Countertops are made from recycled materials
- Flooring made from bamboo
- Lighting provided by Solatubes and low voltage led lights
- Window coverings and linens are made from hemp, kenaf and flax, are 100% organic and recyclable



# Appliances

- Energy star Certified 322kWh estimated yearly electricity use
- Not produced from Ozone damaging chemicals
- Fully electric stove and refrigerator operating on 115V
- Made from recycled stainless steel
- Dual-mode faucet w/mist mode to reduce water consumption



# Shower

- Passive sunrays heat water for warm showers
- Powers internal pump that creates water pressure
- Low water consumption shower head
- Shower stall material made of USDA approved Parkland PLASTEX which is made of 95% reused, landfill plastics



